AMENDMENT TO THE CLAIMS:

The following claim set replaces all prior versions, and listings, of claims in the application:

1. – 20. (Canceled)

21. (currently amended) A method of cleaning heat exchange surfaces of a heat exchange system, comprising the steps of:

(a) leading an exhaust gas stream by [[the] heat exchange surfaces of a heat exchange system;

(b) performing a cleaning cycle on the heat exchange surfaces by cleaning sequentially differently located parts of the heat exchange surfaces with cleaning equipment having an operation parameter status, wherein respective particles are released from each of the differently located parts being cleaned, and the released respective particles associated with each of the differently located parts being cleaned are entrained sequentially with the exhaust gas stream;

(c) measuring the amount and/or type of the respective sequentially released particles entrained with the exhaust gas stream so as to create particle measurement data associated with each of the respective differently located parts of the heat exchange surfaces cleaned during a cleaning cycle, and

(d) linking together and storing into an electronic memory [[the]] location information of the respective differently located parts of the heat exchange surfaces that are ~~being~~ cleaned during the cleaning cycle and the respective particle measurement data created during the cleaning cycle so as to create fouling information related to [[of the]] fouling on the respective differently located parts of the heat exchange surfaces as a

function of the location of the respective differently located parts of the heat exchange surfaces.

22. (currently amended) The method according to claim 21, further comprising the steps of storing the operation parameter status into the electronic memory, and linking the operation parameter status together with the location information of the respective parts of the heat exchange surfaces being cleaned during the cleaning cycle and the particle measurement data created during the cleaning of the respective parts of the heat exchange surfaces.

23. (previously presented) The method according to claim 22, wherein the operation parameter status comprises the status of at least one operation parameter selected from the group consisting of identification data of the cleaning equipment, location information of the cleaning equipment, operational status of the cleaning equipment, speed of the cleaning equipment, and effect of the cleaning equipment.

24. (previously presented) The method according to claim 21, wherein the cleaning equipment comprises a soot blower.

25. (previously presented) The method according to claim 21, wherein the cleaning equipment comprises at least one selected from the group consisting of a steam based soot blower, an acoustic soot blower, an air gun, a hammer cleaner, and a mechanical cleaner.

26. (previously presented) The method according to claim 21, wherein the measuring step (c) comprises measuring the mass flow of particles in the exhaust gas stream.

27. (withdrawn and currently amended) The method according to claim 21, further comprising the step of optimizing the time lapse between two cleanings of different parts of the heat exchange surfaces by using the fouling information ~~of the fouling~~ as a function of the location of the heat exchange surfaces.

28. (currently amended) The method according to claim 21, further comprising the step of optimizing the cleaning speed of the cleaning equipment used for cleaning different parts of the heat exchange surfaces by using the fouling information ~~of the fouling~~ as a function of the location of the heat exchange surfaces.

29. (withdrawn and currently amended) The method according to claim 21, further comprising optimizing the operation parameters for the cleaning of different parts of the heat exchange surfaces by using the fouling information ~~of the fouling~~ as a function of the location of the heat exchange surfaces.

30. (previously presented) The method according to claim 27, 28 or 29, wherein optimizing is based on at least one variable of a tendency of fouling on different parts of the heat exchange surfaces, and a carbon content in the ash.

31. (currently amended) The method according to claim 21, further comprising using the fouling information ~~of the fouling~~ as a function of the location of the heat exchange surfaces for estimating the tendency of fouling on the heat exchange surfaces.

32. (currently amended) The method according to claim 21, further comprising using the fouling information ~~of the fouling~~ as a function of the location of the heat

exchange surfaces for estimating the distribution of fouling on the heat exchange surfaces.

33. (previously presented) The method according to claim 21, further comprising the steps of:
measuring particle distribution on a cross-section of an exhaust gas channel,
comparing the measured data of the particle distribution with previous measurements of the particle distribution, and
using the result of the comparison in determining the distribution and tendency of fouling on the heat exchange surfaces.

34. (previously presented) The method according to claim 21, wherein measuring of the amount and/or type of the released particles in the exhaust gas stream is made with an Electric Charge Transfer measurement system.

35. (previously presented) The method according to claim 34, further comprising:
producing AC and DC signals representing particles in the exhaust gas stream by the Electric Charge Transfer measurement system, and
determining the tendency and distribution of fouling on the heat exchange surfaces by using the AC and DC signals.

36. (previously presented) The method according to claim 34, further comprising estimating the amount of unburned carbon in the ash flow in the exhaust gas stream by using the AC and DC signals produced by the Electric Charge Transfer measurement system.

37. (currently amended) A system for cleaning heat exchange surfaces of a heat exchange system, comprising:

cleaning equipment arranged to sequentially clean differently located parts of the heat exchange surfaces, so as to release sequentially particles from the respective differently located ~~the cleaned~~ parts of the heat exchange surfaces cleaned by the cleaning equipment;

means for measuring the amount and/or type of the sequentially released particles in the exhaust gas stream so as to create particle measurement data related to respective different locations of the differently located parts cleaned sequentially by the cleaning equipment;

means for linking together and storing in an electronic memory [[the]] location information of the respective differently located parts of the heat exchange surfaces being cleaned by the cleaning equipment and the particle measurement data created during the cleaning of [[said]] the respective differently located parts of the heat exchange surfaces so as to create fouling information [[of the]] related to fouling on the respective differently located parts of the heat exchange surfaces.

38. (currently amended) The system according to claim 37, further comprising means for detecting an operation parameter status of the cleaning equipment.

39. (currently amended) The system according to claim 37, further comprising means for controlling the cleaning equipment on the basis of the information of the fouling on the heat exchange surfaces.

40. (previously presented) The system according to claim 37, wherein the cleaning equipment comprises a soot blower.

41. (previously presented) The system according to claim 37, wherein the cleaning equipment comprises at least one selected from the group consisting of a steam

based soot blower, an acoustic soot blower, an air gun, a hammer cleaner, and a mechanical cleaner.